

METHOD AND APPARATUS FOR SELECTING, MODIFYING AND SUPERIMPOSING ONE IMAGE ON ANOTHER

Field of the Invention

This invention relates to digital processing of a plurality of images and, in particular, the superimposing of one image on another. In one illustrative application of this invention, the digital processing occurs in the context of the Internet and on a web-site, which is accessible via a transmission link, the Internet for example, typically by users employing a browser to select and modify one or both of the sets of images before superimposing one on another. In a further application, this invention may be used to permit a customer from his/her browser to select and modify a first image in the form of a logo or trademark of a company, a geographic unit such as a country, city, state, etc., or a sports team, etc., and to superimpose that selected first image onto on a second image of a promotional product such as luggage, apparel such as a hat, writing instruments, electronic devices such as a radio and the like.

Background of the Invention

The internet comprises a vast number of computers and computer networks that are interconnected through communication links. The interconnected computers exchange information using various services, such as electronic mail, Gopher, and the World Wide Web ("WWW"). The WWW service allows a server computer system (i.e., Web server or Web site) to send graphical Web pages of information to a remote client computer system. The remote client computer system can then display the Web pages. Each resource (e.g., computer or Web page) of the WWW is uniquely identifiable by a Uniform Resource Locator ("URL"). To view a specific Web page, a client computer system specifies the URL for that Web page in a request (e.g. a HyperText Transfer Protocol ("HTTP") request). The request is forwarded to the Web server that supports that Web page. When the Web server receives the request, it sends that Web page to the client computer system. When the client computer system receives that Web page, it typically displays the Web page using a browser.

1 A browser is a special-purpose application program that effects the requesting of Web pages
2 and the displaying of Web pages.

3 Currently, Web pages are typically defined using HyperText Markup Language
4 ("HTML"). HTML provides a standard set of tags that define how a Web page is to be
5 displayed. When a user indicates to the browser to display a Web page, the browser sends a
6 request to the server computer system to transfer to the client computer system an HTML
7 document that defines the Web page. When the requested HTML document is received by
8 the client computer system, the browser displays the Web page as defined by the HTML
9 document. The HTML document contains various tags that control the displaying of text,
10 graphics, controls, and other features. The HTML document may contain URLs of other
11 Web pages available on that server computer system or other server computer systems.

12 The World Wide Web is especially conducive to conducting electronic commerce.
13 Web Servers have been programmed to permit vendors to provide a wide array products and
14 services for sale over the Internet. A user, who is a potential purchaser, may browse one or
15 more websites, which provide lists of products or services for sale, much like a catalogue. A
16 purchaser may preview these lists to select a desired product or services to be purchased.
17 When the user has completed selecting the items to be purchased, the server computer
18 system then prompts the user to enter information to complete the ordering of the selected
19 items. This purchase generally deals with how and where the selected items may be
20 delivered to the purchaser and how the purchaser will pay for the selected items.

21 A service to be marketed over the Internet involves the superimposing of one image
22 on another to permit the prospective purchaser to preview the composite image before
23 buying. TOMAX USA.com (www.tomaxusa.com/e-sample/) is an example of such a
24 service, where a second image of a logo of a business company or athletic team for example
25 may be superimposed on a first image in the form of promotion merchandize such as a
26 watch, clock, calculators or other electronics. Initially, a second image logo is forwarded to
27 TOMAX. The logo may be in the form of a photograph, e.g., a black and white color
28 separated artwork of the logo, and, in that form, would be forwarded by mail to TOMAX.
29 Alternatively, the logo may be scanned and converted to a digital signal, before being

1 formatted by Adobe Illustrator into an EPS format or by Adobe PhotoShop; the formatted
2 signals are transmitted to TOMAX USA.com. If E-mailed, an indication of the PMS color
3 also needs to be transmitted to permit the logo to be reproduced at the processing site in its
4 precise colors. At the processing site, the received image of the logo is converted back to a
5 hard copy, before it is assembled with the promotional product of interest and a photograph
6 of the logo superimposed on the product is taken. In turn, the photograph is scanned and the
7 converted, rasterized image is transmitted as an E-mail attachment to the user's browser,
8 where it may be previewed. TOMAX USA indicates that the superimposing process will
9 require 60 hours or perhaps less, depending on workload. In addition, a security code
10 number is transmitted with the superimposed image to the purchaser, while the superimposed
11 image is also uploaded to the website of TOMAX USA.. The purchaser may use that
12 security code to access on line the superimposed image from TOMAX USA's website.
13 Similarly, the purchaser may give that security code to another person, a customer of the
14 purchaser for example, whereby the customer may also view the superimposed image from
15 this website.

16 A drawback to the technique described above is that the superimposing is performed
17 photographically and, as a result, requires a significant amount of time. Further, the
18 TOMAX USA process is not capable of adjusting the color of either the image of the logo
19 and/or the promotional product. Further, there is no provision for changing the relative size
20 of the logo with regard to the product. It is appreciated that the size of the product may vary;
21 for example, the product may take the form of a piece of luggage or a relatively small
22 product such as a ball point pen. In order to fit a logo on a particular product, it is necessary
23 to adjust the size of the logo to fit that of the product. Still further, it is necessary to place the
24 logo on the product in accordance with the configuration and size of the product. In the
25 example of the ball point pen, the size of the logo is selected to be relatively small, and the
26 logo is oriented along the axis of the pen. On the other hand if the logo is placed on luggage,
27 the size of the logo would normally be larger. The logo could be disposed in a number of
28 positions relative to the luggage, e.g., parallel to its bottom surface or diagonally across a
29 side surface, i.e., the logo would be disposed to intersect the bottom surface at an angle. In

1 short, the above described website does not permit the purchaser to adjust on line the relative
2 size, color or location of the logo with respect to the promotional product.

3 Summary

4 Accordingly, it is an object of this invention to digitally process and superimpose a
5 second image on a first image and to display the composite image, whereby a prospective
6 purchaser can preview the product bearing the logo represented by the composite image.

7 It is one object of this invention to permit the purchaser to change and view the color
8 of the first image, e.g., a logo, and the second image, e.g., a promotional product, before
9 making a selection of the color for these images from a selection of colors.

10 It is a further object of this invention to permit the purchaser to change the relative
11 size of the first image with respect to the second image and to preview these changes, before
12 finalizing the relative sizes of the first and second images.

13 It is a still further object of this invention to permit the purchaser to change and
14 preview the relative orientation of the second image with respect to the first image, before
15 finally determining the relative orientation.

16 It is another object of this invention to permit on line access to a website that is
17 connected to the Internet, whereby the purchaser may vary image parameters such as the
18 color, the relative size and the relative orientation of the images of the logo to the
19 promotional product, before finally setting these parameters.

20 In accordance with these and other objects of the invention, this invention provides a
21 method of preparing a server to support a client system to construct and preview a composite
22 image. The composite image comprises first and second images. The method of this
23 invention comprises the steps of constructing at the server first and second libraries, inputting
24 to the server data representative of sets of the first and second images, and generating from
25 the inputted set of first images a corresponding set of templates. Each template bears a
26 corresponding one of the set of the first images. Next the set of templates is loaded into the
27 first library. Then, the set of second images is loaded into the second library.

1 In one illustrative embodiment of this invention, the first image represents a
2 promotional product, the second image represents a logo and the composite image is the logo
3 superimposed on the promotional product.

4 In a further aspect of this invention, the method of this invention includes the step of
5 creating and storing in memory a set of first parameters that defines a certain characteristic
6 of the first image, and a set of second parameters that define a certain characteristic of the
7 second image. In an illustrated embodiment of this invention, each of the first and second
8 parameters defines a particular color, and a further parameter defines the relative size of the
9 second image as compared to the first image.

10 In another aspect of this invention, the method of this invention comprises the further
11 step of preparing a first webpage bearing indicia designed to be actuated by a user of the
12 supported client system to select one of the set of first images, embedding the selected first
13 image into the webpage to be downloaded to and displayed by the supported client system,
14 creating and storing in memory a set of first parameters that define a certain characteristic of
15 the first image, and preparing a second webpage bearing indicia designed to be actuated by
16 the user of the supported client system to select one of the set of first parameters to define
17 that characteristic of the selected first image.

18 In a still further aspect of this invention, the method of this invention comprises the
19 steps of preparing a third webpage bearing indicia designed to be actuated by the user of the
20 supported client system to select one of the set of second images, of embedding the selected
21 second image into the third webpage to be downloaded to and displayed by the supported
22 client system, of creating and storing in memory a set of second parameters that define a
23 certain characteristic of the second image, and of preparing the third webpage to bear further
24 indicia to be actuated by the user of the supported client system to select one of the set of
25 second parameters to define that characteristic of the selected second image.

26 In a further aspect, the method of this invention permits a client system to construct
27 and preview a composite image, which includes first and second images. First and second
28 libraries are provided at a server supporting the client system to store respectively sets of the
29 first and second images. The method is carried out by the steps of establishing a

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1 communication session over a communication link between the server and the client system,
2 and of facilitating a user at the client system during the course of said communication session
3 to select from the first library a selected first image and to select from the second library a
4 selected second image. Then, a template is generated bearing the selected first and second
5 images, before the template is embedded into a webpage. Finally, the webpage is
6 downloaded to the client system to display the composite image at the client system.

7 **Brief Description of the Drawings**

8 The forgoing objects and advantages of the present invention may be more readily
9 understood by one skilled in the art with reference being had to the following detailed
10 description of a preferred embodiment thereof, taken in conjunction with the accompanying
11 drawings wherein like elements are designated by identical reference numerals throughout
12 the several views, and in which:

13 Fig. 1 is a functional block diagram illustrating how a purchaser's browser and a
14 server of the website to be accessed by the purchaser's browser are connected to and by a
15 communication link to each other;

16 Figs. 2A and 2B are flow diagrams, which are loaded on the server system for
17 respectively inputting and processing a variety of logos to populate a logo library and a
18 variety of promotional products to populate a product library in a data base of the server
19 system shown in Fig. 1;

20 Figs. 3A - F illustrate a series of screens or webpages that appear on the purchaser's
21 browser to respectively permit the purchaser to preview and to select the various parameters
22 of a logo and the promotional product such as the color of each and the relative size and
23 orientation of the logo to the product; and

24 Fig. 4 is a flow diagram which illustrates the process by which the purchaser uses
25 his/her browser to access the website and its server system as shown in Fig. 1, which hosts
26 the computer software for permitting the purchaser to select and configure the logo on the
27 promotional product in accordance with the teachings of this invention.

Detailed Description of a Preferred Embodiment of the Invention

Referring now to the drawings and in particular to Fig. 1, there is shown an embodiment of this invention which permits a purchaser or user, using his/her client system 10, to access a server system 18 by exchanging messages over a communication link 16, which in one example of this invention may take the form of the Internet. The client system 10 comprises a browser 12 and its assigned client identifier, which is known as a "cookie". The client identifier is stored in a file 14. Though only a single client system 10 is illustrated in Fig. 1, it will be appreciated that there would typically be a plurality of client systems 10, which are connected to the communication link 16 and capable of transmitting messages over the link 16 to the server system 18. In one embodiment of this invention, the purchaser initiates on the browser 12 a communication session with the server system 18 by assigning and sending over the link 16 his/her client identifier to the client system 18. From then on, the client system 10 includes its client identifier with all messages sent to the server system 18 so that the server system 18 can identify the particular client system 10 from which the message was sent.

The server system 18 comprises, as shown in Fig. 1, a web server 18a, a data base server 18b, and a dynamic graphics server 18c. The server system 18 is front ended, as described above, in that the purchaser can access the system 18 by sending requests from the browser 12 via the communication link 16 to the web server 18a, while data in the form of images of the different promotional products and logos are back ended, i.e., this data is input to the server system 18 via a block 32. As will be described in detail with respect to Figs. 2A and 2B, data reflective of the logo images and the product images are obtained, formatted and input by the block 32. The processing of block 32 is effected by the software illustrated in Figs. 2A and 2B, as executed by a developer work station processor (not shown) that may be positioned at any convenient location, not necessarily at the site of the server system 18 as shown in Fig. 1. Further, the logo data may be entered by a purchaser on his/her client system 10 to be transmitted over the communication link 16 to the web server 18a for processing. Such use of the client server 10 permits a purchaser to have his or her particular

1 logo to be processed, e.g., superimposed on a selected promotional product, in accordance
2 with the teachings of this invention.

3 This invention relates generally to superimposing a second image onto a first image.
4 In an illustrative embodiment of this invention, the second image takes the form of a logo, a
5 trademark or any other image or visual message provided by the purchaser or end user.. The
6 logo may refer to a commercial product, a geographic location such as a city, a state or a
7 nation, an athletic team or the like. A logo is illustrated in Figs. 3A, B, C, D and F, where it
8 is identified by a numeral 144; the logo 144 is superimposed on a first image which, for
9 example, may take the form of a promotional product 142. Such a product 142 may take the
10 form, for example, of a cap 142a, a golf ball 142b, a cup 142c, a shirt 142d or the like.

11 In turn, the web server 18a comprises a server engine 20, and database 25 for storing
12 a plurality of web pages 130a, b, c etc. As is well know in the art, the server engine 20
13 processes the purchaser messages from the browser 12 in the form of HTTP requests to
14 access web pages 130 identified by URLs and, in turn, transmits the requested web p[ages
15 130 to the requesting system 10, where they are displayed, e.g., on a CRT (not shown).

16 The database server 18b comprises a database 22 for storing a client
17 identifier/customer table, a customer database 26, an order database 28 and a product/logo
18 database 30. The customer database 26 may contain for example customer information for
19 various purchases or potential purchasers. The customer information includes purchaser-
20 specific order information such as the name of the customer and billing information. The
21 order database 28 stores an entry for each order that has not yet been transmitted to a
22 purchaser. The client identifier/purchaser table 22 contains a mapping from each client
23 identifier, which is a globally unique identifier that uniquely identifies a client system 10, to
24 the purchaser last associated with that client system 10. The product/logo data base 30
25 includes separate storage areas for receiving respectively data reflective of the different
26 promotional products and logos which may be processed in accordance with this invention.
27 As will be illustrated in and described with respect to Figs. 3A-F, a second image of a
28 purchaser selected logo 144 will be superimposed onto a first image of a purchaser selected
29 promotional product 142, Though the database server 18b has been described in Fig. 1 in

1 terms of a plurality of distinct data bases 22, 26, 28 and 30, it would be appreciated by one
2 skilled in the art that one memory or another combination of memories could store this data.

3 Still referring to Fig. 1, the dynamic graphics server 18c comprises a product template
4 memory 38, wherein a plurality of templates, each carrying one first image of a promotional
5 product 142, are stored, a logo template memory 40, wherein a plurality of templates, each
6 carrying one second image of a logo 144, are stored, and a generator 42 which carries out the
7 processing identified by the numeral 160 as shown in Fig. 4 and, in particular by the step 168
8 thereof. Note that both of the product/logo database 30, and the product template memory 38
9 and the logo template memory 40 are needed. The product/logo database 30 stores the lists
10 of all of the products and logo that the system 18 can handle. As will be explained, pull
11 down menus reflecting these lists stored in the database 30 are provided to the user, whereby
12 he/she can select one of each of the products and the logos for later processing, The template
13 memories 38 and 40 are separately needed in order to permit the processing and, in
14 particular, the superimposing of a logo image on a product image as will be explained below.

15 Further as will be shown and explained with respect to the flow diagram of Fig. 4, the
16 programming for the client system 10 and the server system 18 permits the purchaser to set
17 up a communication session between the client system 10 and the sever system 18, whereby
18 the purchaser can communicate with the server system 18 to preview a number of each of the
19 logos 144 and the promotional products 142, to control the selection of the color of each of
20 the logos 144 and products 142, and to control the relative size and position of the logo 144
21 with respect to its promotional product 142.

22 In Fig. 2A, there is shown a flow diagram of the steps of the process, that was
23 generally identified by the block 32 as shown in Figure 1, for inputting and formatting data
24 indicative of the second images. In particular, data representing a plurality of second images
25 reflective of different logos 144 may be so processed in the block 32 and inputted to the
26 database server 18b and, in particular, to its database 30, wherein a data library of logos is
27 constructed. Thus, the purchaser may, as will be described, preview and select one second
28 image or logo 144 from this library to be superimposed on the promotional product 142. The
29 second or logo image may be transmitted by different conduits to the site where the

1 processing 32 is performed by any of the well know computers such as a Macintosh or
2 Windows personal computer as programmed in accordance with the process illustrated in
3 Fig. 2A. Though the site of the processing 32 may be in the vicinity of the server system 18
4 as shown in Fig. 1, it would be appreciated by one skilled in the art that such a site may be
5 disposed at a distance from the server system 18 and the signals derived from the processing
6 32 transmitted thereto by any conventional means. For example, a hard copy of a logo 144
7 could be mailed in step 52 to the processing site, where at the hard copy is scanned in step 54
8 to input data in a raster format. Alternatively, the logo data may be stored in a diskette or
9 ROM, which is delivered in step 56 to the processing site. In a third embodiment, the logo
10 data is Emailed in step 58 from the client's system 10 to the site of the processing 32.

1 Both the Emailed data and that carried by the diskette are scanned in step 60 to
2 remove possible viruses; if step 60 fails to remove the virus, an error alarm is generated in
3 step 62. The data carried by the diskette is converted in step 66 to a raster format. The
4 rasterized data from steps 66 and 54 are applied to step 68, which converts the rasterized data
5 from both sources into Encapsulated Post Script (EPS) data. EPS data is formatted in
6 mathematical terms, whereby the data can be readily scaled without loss of resolution. As
7 will be described, the logo data will be scaled whereby the size of the logo 144 may
8 selectively set by the purchaser relative to the size of the promotional product 142. In one
9 illustrative embodiment, step 68 may be implemented by the software marketed by Adobe
10 under its trademark, "SteamLine". Step 68 converts the rasterized data outputted from the
11 steps 54 and 66 into data, which defines the outline of each character in terms of a series of
12 lines. Each of these lines is a vector, which is defined by a set of coordinates.

13 The EPS data derived from each of steps 68 and 64 are further processed in step 70,
14 which is a program that permits an operator to edit the outline of the inputted character and
15 to reset the coordinates of the component lines accordingly. The rasterized data outputted by
16 the steps 54, 60 and 66 is a collection of a fixed number of dots or pixels, whose image upon
17 expansion decreases in resolution. By contrast, the EPS data outputted by step 70 is of a
18 vector format, which mathematically defines the image to permit its expansion without loss
19 of resolution. Step 70 also scales the logo 144 to a common size, which may be confined by

1 a given figure of selected dimensions, e.g., a 3" x 3" square. The problem is that the logos
2 144 to be inputted and formatted by the process 32 come in all different sizes. In particular,
3 step 70 reduces the logos 144 of different sizes to a common default size and, in particular,
4 determines the largest dimension of the logo 144 before the logo 144 is oriented so that its
5 largest dimension fits within the 3" x 3" square. In one illustrative embodiment of this
6 invention, step 70 may be implemented by the software marketed by Adobe under its
7 trademark "Illustrator".

8 Next, a flash template data file such as that marketed by Macromedia is opened in
9 step 74 for the logo data of the vector formatted EPS data. In one illustrative embodiment,
10 step 74 creates 26 templates, one for each letter of the alphabet, whereby all of the logo
11 images stored in one template begin with the letter that was assigned to that template. For
12 example, all of the images of the logos 144 beginning with "A" are stored in the A template.
13 In turn, step 76 compiles the logo templates into a SWT format, which is an executable
14 format and is machine readable, i.e., is readily read and understood by computers. Then in
15 step 78, the template is uploaded to the server system 18, as shown in Figure 1, where the
16 logo templates, that were created in the processing 32, are transmitted via a link 34b to the
17 dynamic graphics server 18c, wherein they are stored in the logo template memory 40 as
18 shown in Fig. 1. The logo template memory 40 may be considered a library of the available
19 logo or second images. Similarly, the name of the logo 144 (which would not normally
20 include the stylization of the logo) is identified and translated by step 72 into the HTML to
21 permit the name to be incorporated into one of the web pages 24. In particular, step 78
22 uploads to the web server 18a the logo name to be included into a drop down panel, which
23 bears the names of all of the logos 144 kept in the library stored in the logo template memory
24 40. A drop down panel of logo names may be displayed as will be described below by
25 clicking on a panel 152 of the page 130e as shown in Fig 3E.

26 Referring now to Fig. 2B, there is shown a further part of the process 32 that was
27 shown generally in Fig. 1. In particular, Fig. 2B illustrates the detailed steps of that process
28 32 for inputting and formatting data indicative of the first image, e.g., one of a plurality of
29 the promotional products 142 which may be selected for processing. The product data is

1 structured in an illustrative embodiment of this invention as a template, in which one of the
2 first or product images is embedded. In turn, a plurality of product templates are stored as a
3 library of the available promotional products memory 38, as shown in Figure 1. The first or
4 promotional product 142 image may be transmitted by different conduits to the site where the
5 processing 32 is performed. For example, a hard copy may be transmitted in step 92 to step
6 94, which scans the hard copy to output a raster image data file which represents the first
7 image. Alternatively, the actual product 142 may be shipped in step 96 to the processing
8 site, where step 98 obtains the first image by digitally photographing the product 142. In a
9 still further embodiment, the first image of the product 142 may be Emailed in step 100 to
10 the processing site, where step 102 scans the inputted image data to remove possible viruses;
11 if step 102 fails to remove the virus, an error alarm is generated in step 104. The data
12 outputted by each of the steps 94, 98 and 102 is applied to step 106, where the inputted data
13 in digital, rasterized format is edited by an operator in preparation for inclusion into a flash
14 template data file. In particular, the step 106 permits an operator to redraw, erase or change
15 or adjust the color of the rasterized product image. The output of the editing is a series of
16 layers. The bottom most image corresponds to the original unedited image. The uppers
17 images are respectively a record of the changes to the image's configuration, the erased parts
18 of the image and the color changes. Step 106 also permits the first or product image to be
19 normalized to a standard configuration and size, e.g., a 400 x 400 pixel square. Finally, step
20 106 positions on the product image at least one "place holder" that identifies that point or
21 points on a promotional product where a logo 144 may be positioned. With reference to
22 Figs. 3A, B, C, D and E, each of the products 142a, b, c and d has a single place holder for
23 receiving a selected logo 142. In this example shown in Fig. 3E, the product 142 is a cap
24 142a and, typically, would include only one place holder due to its size and configuration.
25 When the product 142 may accommodate a logo in more than one position, e.g., where the
26 product 142 is luggage, more than one place holder may be assigned to such a product 142.
27 It is contemplated that present invention may include the capability to permit the purchaser to
28 choose which of the available place holders where the selected logo 144 may be positioned
29 relatively with respect to the promotional product 142.

1 The edited data from step 106 is applied to step 108, which translates the inputted
2 rasterized data indicative of one of the promotional products 142 into JPG formatted data
3 which retains its rasterized formatting and is interchangeable. As shown in Fig. 2B, the JPG
4 data file is created with a plurality of layers, one layer for each of the colors in which a
5 particular product is available. For example as shown in Fig. 3E, a promotional product in
6 the form of a cap 142a is available in five colors, namely forest green, black, ivory, khaki
7 and navy blue. In that example, step 108 would develop a JPG layer for each of these five
8 colors. Next, a flash template data file is opened in step 110 for each of the JPG layers
9 created in step 108. In step 112, an executable JPT template is compiled for each of the flash
10 template data layers, e.g., one for each of the available colors.

11 In step 116, the rasterized image is converted into a composite image of the cap 142a
12 and a generic logo 144' such as "Your Logo", which are GIF formatted and disposed as a
13 featured item on the web page 130b of Fig. 3B. In step 114, the image rasterized data is
14 converted to a JPG data format of a detailed image that is to be inserted on page 103d as
15 shown in Fig. 3D and includes the product 142 with the generic logo 144', "Your Logo"
16 superimposed thereon and is similar to the menu web page 130b; in particular, this composite
17 image as shown in Fig. 3D is larger and more detailed than that of the composite image
18 appearing as the featured item in the web page 130b of Fig. 3B. In step 118, the digital
19 rasterized image derived from any of the steps 102, 98 and 94 is translated in step 118 into
20 the HTML language to permit the product data to be imbedded into one of the pages 130,
21 whereby an image of the promotional product 142 would appear on the home page 130a of
22 Fig. 3A, the featured items page 130b of Fig. 3B, a detailed page 130d as shown in Fig. 3D,
23 and the control panels 154 and 156 as shown on the InstaSample pages 130e and f of Figures
24 3E and F respectively.

25 Referring now to Fig. 4, there is shown the steps of the process 160, whereby the
26 purchaser may initiate from the browser 12 of his/her client system 10, as shown in Fig. 1, a
27 communication session or conversation between the client system 10 and the server system
28 18, whereby the purchaser can select one of the available promotional products 142 that are
29 stored as a library in the product template memory 38, the color of the selected product 142,

1 one of the available logos 144 that are stored as a library in the logo template memory 40, the
2 color of the selected logo 144 and the relative size of the selected logo 144 with respect to
3 the product 142. Starting in step 162, the purchaser logs on at his/her browser 12 to the
4 website associated with the server system 18, whereby the home page 130a, as shown in Fig.
5 3A, appears on a display (not shown) of the browser 12. Next in step 164, the purchaser
6 clicks on the "featured item" link 136, whereby the featured items page 130b, as shown in
7 Fig. 3B, appears on the browser screen. The page 130b bears a number of links 180-1, 180-2
8 --- 180-n, which may be clicked on by the purchaser to bring up images of the corresponding
9 items or promotional products 142, e.g., apparel, bags & duffels, etc., known as "featured
10 items". In the illustrative embodiment of Fig. 3B, the purchaser has clicked on the link 180-1
11 and images of apparel, i.e., the cap 142a with the generic logo 144' superimposed thereon
12 and a shirt 142d with the generic logo 144' superimposed thereon, are displayed. In turn,
13 there is another set of links 182-1 and 182-2. Links 182-1 and 182-2 are associated with the
14 cap 142a and the shirt 142d respectively. The purchaser may then select one of displayed
15 products 142 on page 130b by clicking on that product's links 182, whereby the web page
16 130e is drawn up; as illustrated in Fig. 3E, the selected promotional product 142, in this
17 instance the cap 142a, is displayed without any logo 144 in an enlarged and more detailed
18 image of the cap 142a than that shown in Fig. 3B.

19 At this stage of the process as shown in Fig. 3E, the image of a logo 144 is absent and
20 has not yet been selected or superimposed on the cap 142a. Next in step 166, the purchaser
21 makes his/her choice of the logo 144. As shown in Fig. 3E, the web page 130e includes a
22 panel 152, which in turn comprises a set of keys 152a-z. The purchaser cliques on one of the
23 keys 152, which corresponds to the first letter of the logo 144 to be selected and a list of the
24 logos beginning with the selected letter will appear in the block 153. In turn, the purchaser
25 may scroll through the logos 144 appearing in the block 153 until the logo 144 of choice
26 appears; the purchaser then clicks on the selected logo 144 appearing in the block 153,
27 whereby the selected logo 144, e.g., "PromoCity.com", will be superimposed on the cap
28 142a, as shown in Fig. 3F.

1 Still in step 166, the purchaser may choose among the available colors for the selected
2 product 142, e.g., the cap 142a, by clicking on a selected one of the plurality of keys 154a -
3 e, which correspond in one illustrative embodiment respectively to the following colors:
4 forest green, black, ivory, khaki and navy blue. When the purchaser clicks on a particular
5 key 154a-e, e.g., 154b, the color of the cap 142a will be rendered as black. The purchaser
6 then selects the desired color of the logo 144 by actuating one of the plurality of keys 156-1
7 to 156-120 within a box 156 of the web page 130f, as shown in Figs. 3E and F. It is apparent
8 that the number of colors available for the image of the logo 144, e.g. 120, is much greater
9 than the number of colors available for the promotion product 142, e.g., 5. This typically is
10 necessary, because each logo 144, which corresponds to a particular entity, will have a
11 unique shade or intensity of color, and it is contemplated that a wide variety of colors will be
12 necessary to provide the proper color to the logo 144 to match that color which is normally
13 associated that logo 144. For example, the trade dress of Kodak includes a unique shade of
14 an orange gold.

15 After the promotional product 142 has been selected by the purchaser, the product's
16 color, the logo 144, and the logo's color have been selected by the purchaser, the process 160
17 moves to a generator process 168, where a JPG file representative of the second image
18 superimposed on the first image, i.e., the logo image superimposed on the product image, is
19 generated. The software for effecting the generator process 168 resides in a generator 42,
20 which as shown in Fig. 1 resides in the dynamic graphics generator 42. As will be explained
21 below, the generator process 168 processes the selected product and logo templates that were
22 accessed from the product and logo template memories 38 and 40 in steps 164 and 166, as
23 described above. First, the generator process 168 executes an active server page (ASP) file
24 which contains the color attributes of the product 142 and the logo 144 and inserts the
25 selected colors for the selected product 142 and logo 144 into their respectively accessed
26 templates. At this stage, the product data is in a rasterized format, while the logo data is in a
27 vector format. Next, the generator process 168 inserts the logo image data into the product
28 template. This insertion step effects the superimposing of the logo image on the product
29 image, and at the same time, adjusts the relative position of the logo with respect to the
30 product, i.e., the logo is placed in the place holder that was affixed to the product. The

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1 insertion step also causes the product and logo images to be painted respectively with the
2 selected colors, and the size of the logo image to be adjusted with respect to that of the
3 product in accordance with a scaling factor. In one illustrative embodiment, the scaling factor
4 represents the degree or % of downsizing from the full sized logo stored on its template.
5 Alternatively, the scaling factor could also represent an increase in the size of that image
6 stored on its template without departing from the teachings of this invention. When the
7 product 142 was selected in step 164 as described above, the corresponding template bearing
8 that product 142 as was constructed in step 112 of Fig. 2B is retrieved from its library in the
9 product template memory 38 of the graphic server 18c as shown in Fig. 1. When the logo
10 144 is selected in step 166 above, its template bearing the logo in the SWT data format is
11 withdrawn from its library in the logo template memory 40 and is applied to the template
12 bearing the product 142.

13 ASP files instruct the server software as to which of the selected logo colors and
14 product colors have been chosen and to execute the graphic server 18c based on software
15 programming contained in the generator 42 to paint the logo image and the product image
16 respectively with those colors that have been previously selected. The ASP control panel
17 files may be coded in a number of different conventions to provide a wide variety of colors.
18 In one illustrative embodiment, a particular color may be represented by the parameters R, G
19 and B that represent respectively the primary colors: red, green and blue. A numerical value
20 in the range of 0 to 255 that is representative of the intensity of a color is assigned to each of
21 the primary colors. In an alternative embodiment that is often used in the printing industry, a
22 particular color is defined in terms of: cyan C, magenta M, yellow Y and black K. Other
23 standards that could be used by this invention include the Pantone (Commercial) Standard or
24 the Web-Hex Standard, which involves a set of 6 alpha-numeric characters. All color
25 definitions may be converted to RGB. To achieve a more precise rendering of colors on a
26 cathode ray tube as may be used with the browser 12, correction factors may be employed
27 with the above listed color coding conventions. The above described and other color coding
28 standards or conventions of color coding could be used without departing from the teachings
29 of this invention. The ASP control panel files with the selected color coding for the logo

1 images is also included with the library of logo templates stored in the logo template memory
2 40.

3 The completed product template includes the first or product image, the place holder
4 or other equivalent code that determines where on the product image that the logo image has
5 been placed, the adjusted scaling factor that indicates the size of logo image relative to that
6 of the product image, and data from the ASP control panel files that sets the color for each of
7 the selected product and logo images. The product image data, that is retained on the
8 template, is in a rasterized format, whereas the logo image data inserted into this template is
9 in a vector format. Next the generator process copies the logo and product images, along
10 with their color data, product frame and the scaling factor, and merges this data to a third file
11 of a JPG format. In particular, the product data of a JPG format, i.e., a raster format, merges
12 with the logo data of a SWT, i.e., vector data format, whereby the superimposed logo data
13 merges to a rasterized JPG file.

14 After the product template has been executed in step 168, the resultant JPG file
15 produced in step 168 to represent the composite image is embedded into one of the webpages
16 24, as shown in Figs. 3A - F. Next in step 170, the page 130 bearing the superimposed
17 image embedded therein is returned to that client system 10 which initiated the image
18 selection and superimposing in step 162. Typically, the returned page 130 is presented on a
19 display associated with the browser 12, whereby the purchaser may preview the composite
20 images of the logo 142 superimposed on the product image 144, before purchasing the
21 selected product 144. The purchaser may print out in step 172 a copy of the superimposed
22 images, thereby providing the purchaser or end user with a physical or hard copy of the
23 superimposed images which may be readily given to sales prospects. Thereafter, the image
24 constructing session is terminated in step 174.

25 Although the present invention has been described in terms of various embodiments,
26 it is not intended that the invention be limited to these embodiments. Modification within the
27 spirit of the inventions will be apparent to those skilled in the art. For example, the process
28 of constructing a template may be readily modified to permit the purchaser from his/her
29 browser to adjust the scaling factor, whereby the size of the logo image may be increased or

1 decreased under the control of the purchaser. Similarly, the constructing process may be
2 enhanced within the teachings of this invention to permit the purchaser to selectively place
3 the position of the place holder on the product image and/or to set a plurality of place holders
4 on the product image, whereby the logo may be placed in any of a number relative positions
5 on the promotional product under the control of the purchaser. Still further, the logo image
6 may be segmented and color values could be selected for each of the established segments.
7 In addition, a cookie that would identify a particular customer and an indication of the
8 previous choices made by that purchase, e.g., the favorite color or colors of that customer,
9 may be stored in the customer database 26 as shown in Fig. 1. The scope of the present
10 invention is defined by the claims that follow.

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